Reference 6

9532544

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Interoffice Memorandum

TO : Gloria Vasquez, Chief Clerk, TNRCC DATE: November 14, 1994

THRU : Janet Wyman, Applications Team, Watershed Management Permitting

FROM : Tom Weber, Manager, Permitting Section, Watershed Management Division

SUBJECT: Transmittal of an application for Renewal of **Permit No.** 02142, National Oil Recovery Corporation, Industrial

Transmitted herewith for filing with the Texas Natural Resource Conservation Commission is an application for a waste discharge/disposal permit. The executive summary and technical summary/fact sheet are attached. The application contains all the information deemed necessary by the Executive Director of the Commission.

This application is subject to the Commission resolution adopted August 18, 1993, which directs the Executive Director to act on behalf of the Commission and issue final approval of certain permit matters. The Executive Director may issue this permit on or after 30 days from the date of newspaper publication of notice concerning the application unless one or more persons file written protests and/or requests for a hearing.

Based on the information submitted by the applicant and other information presently available, the Executive Director makes the following recommendations:

1. That public notice of the application for Permit be given pursuant to 30 TAC, Chapter 305.

2. If a request for public hearing is not received from an affected party, that the permit be forwarded to the Executive Director for final approval and signature.

Janet Wyman

Tom Weber, Section Manager
Permitting Section

NOV 1 / 94

6. Summary of Proposed Effluent Limits: See attached proposed permit.

7. Once the draft permit is completed, it is sent to the Notice Section of the Texas Natural Resource Conservation Commission where a notice is compiled. This notice is mailed to landowners identified in the permit application and to any interested parties. The applicant must also publish the notice in a newspaper generally circulated in the county where the facility is located. A thirty-day public comment period begins from the date of publication. If a request for a public hearing is filed with the Commission during this time, a public hearing may be held which would result in a proposal for decision. The proposal for decision or the draft permit is placed on the Commission's or the Executive Director's agenda. For additional information about this application contact Ernest D. McFarland, Jr. at (512) 239-4517.

Ernest D. McFarland, Jr.

Date 10-12-94

TECHNICAL SUMMARY

Applicant: National Oil Recovery Corporation
P.O. Box 10283
Corpus Christi, Texas 78460

Permit No.: TNRCC 02142
TX0076635

1. Reason for permit action: The applicant has requested the TNRCC to renew Permit No. 02142.

2. Plant Type: The applicant proposes to operate a crude oil refinery.

   The plant site is located adjacent to and on the east side of FM Road 2725 at the intersection of FM Road 2725 and Bishop Road, approximately one mile southeast of the City of Ingleside, San Patricio County, Texas.

3. Wastewater System Description: The raw water (approximately 240,000 gallons/day) is obtained from the City of Ingleside and/or company owned wells. Process wastewater (steam condensate and desalter effluent) is routed to an oil/water separator. Rainfall runoff from the two process areas (total area of about 26,000 square feet) is routed to a 5,000 barrel holding tank and released at a controlled rate to the oil/water separator. The process wastewater and the process area runoff are then combined and routed to an air flotation unit and an aeration basin (designed for 5 days retention time) and then pumped by pipeline to the receiving waters. The sanitary waste is routed to a septic tank/drainfield system.

4. Receiving Waters: The effluent is discharged to the Corpus Christi Bay, Segment No. 2481 of the Bays and Estuaries. The segment is water quality limited. The designated uses for Segment No. 2481 are exceptional quality aquatic life use, contact recreation, shellfish waters.

Outfall	Waste Type	Flow Gallons/Day	Discharge To
001	Process wastewater and stormwater	120,000 (average)	Corpus Christi Bay

5. Proposed Permit Effluent Limitations Basis: The following items were considered in developing the proposed permit limitations:

   a. Application submitted with letter of August 4, 1994.

   b. Existing permits: TNRCC Permit No. 02142 issued July 10, 1989 and NPDES Permit No. TX0076635 issued December 17, 1986.

   c. EPA Guidelines for Petroleum Refining Point Source Category; 40 CFR 419 Subpart A. See appendix A.

   d. Waste Load Allocation/Evaluation. N/A

   e. Texas Surface Water Quality Standards - TAC 307.1-307.10, effective July 10, 1991.

   f. TNRCC Rules.

   g. Memos from Water Quality Standards Unit dated September 15, 1994 and Water Quality Modeling Unit of the Environmental Assessment Division dated September 16, 1994.

Appendix A

CALCULATION SPECIFICATIONS

INPUT FACILITY, THROUGHPUT, AND FLOW DATA

Notes on Calculations

ELG = Effluent Limitations Guidelines
ELG Pollutant Mass Limit = Sum of Process, Ballast, and Stormwater Mass Allocations

Facility	Data Input	Name
Permittee	National Oil Recovery Corp.	
TNRCC Permit No.	02142	
Outfall(s)	001	
Subject to 40 CFR Subpart (A, B, C, D, or E)	A	SUB_PART
Type of Refinery (Topping, Cracking, Petrochemical, Lube, or Integrated)	Topping	
Throughput Rates	**K bbl/day**	
Feedstock (Crude Oil & NGL) Rate to Topping Unit(s)	62	FEED_STOCK
Process Unit Rates	As Follows	
Flow Rates	**K gal/day**	
Ballast Flow	0	FLO_BALL
Contaminated Stormwater to Treatment System	59.09	FLO_SW

PROCESS WASTEWATER ALLOCATION SECTION
CALCULATE TOTAL REFINERY PROCESS CONFIGERATION FACTOR (REF_PFC)

NOTE: See example of calculations at 40 CFR Part 419.42(a)(3).

Total Refinery Process Configeration Factor = Sum (Unit Process Factors)

Unit Process Configeration Factor = (Unit Process Rate to Feedstock Rate [FEED_STOCK] Ratio) * (Process Weighting Factor)

EPA Process Numbers: See 40 CFR 419.12(b)

Feedstock Rate (FEED_STOCK) = 62 K bbl/day

Crude Processes	EPA Process Number	Unit Process Rate K bbl/day	Unit Process Rate to Feedstock Rate Ratio	*	Unit Weighting Factor	=	Process Config. Factor
Vacuum Crude Distillation	1	20	0.322580		1		0.322580
Crude Desalting	2	32	0.516129		1		0.516129
Atmospheric Crude Distillation	3	10	0.161290		1		0.161290

TOTAL REFINERY PROCESS CONFIGERATION FACTOR (REF_PCF) =======> 1.00

PROCESS WASTEWATER ALLOCATION SECTION
SELECT PROCESS FACTOR VALUE (PRO_FAC)

Based on a Total Refinery Process Config. (REF_PFC) of: 1.00

The Process Factor (PRO_FAC) is: 0.62

PROCESS WASTEWATER ALLOCATION SECTION
SELECT SIZE FACTOR VALUE (SIZ_FAC)

Based on a Feedstock Rate (FEED_STOCK) Rate of: 62 K bbl/day

The Size Factor (SIZ_FAC) is: 1.16

PROCESS WASTEWATER ALLOCATION SECTION
BCT EFFLUENT LIMITATIONS GUIDELINES: BOD5, TSS, OIL & GREASE
BAT EFFLUENT LIMITATIONS GUIDELINES: COD (OR TOC), AMMONIA (AS N), SULFIDE (AS S)
CALCULATE PROCESS WASTEWATER ALLOCATIONS

Pollutant Mass Allocation = Effluent Limitation Guideline (ELG) * (MULT)

(MULT) = (FEED_STOCK) * (PRO_FAC) * (SIZ_FAC)

(MULT) = 44.5904

PROCESS WASTEWATER ELGs (DAILY AVERAGE): LB. PER 1000 BBL OF FEEDSTOCK

	Subpart Type 40 CFR ===> BAT 419.13(b)	Subpart A Topping 40 CFR ===> BCT 419.14(b)
CONVENTIONAL		
BOD5	BCT	4.25
TSS	BCT	3.6
Oil & Grease	BCT	1.3
NONCONVENTIONAL		
COD	BAT	21.3
Ammonia (as N)	BAT	0.45
Sulfide (as S)	BAT	0.024

PROCESS WASTEWATER ELGs (DAILY MAXIMUM): LB. PER 1000 BBL OF FEEDSTOCK

	Subpart Type 40 CFR ===> BAT 419.13(b)	Subpart A Topping 40 CFR ===> BCT 419.14(b)
CONVENTIONAL		
BOD5	BCT	8
TSS	BCT	5.6
Oil & Grease	BCT	2.5
NONCONVENTIONAL		
COD	BAT	41.2
Ammonia (as N)	BAT	0.99
Sulfide (as S)	BAT	0.053

CALCULATE PROCESS WASTEWATER ALLOCATIONS

		APPLICABLE ELGs			BCT/BAT MASS ALLOCATIONS	
		DAILY AVERAGE	DAILY MAXIMUM			
Subpart ==>		Subpart A	Subpart A			
Type ==>		Topping	Topping		DAILY AVERAGE	DAILY MAXIMUM
40 CFR ==>	BCT	419.14(a)	419.14(a)			
40 CFR ==>	BAT	419.13(a)	419.13(a)	* (MULT) =	(lb/day)	(lb/day)
CONVENTIONAL						
BOD5	BCT	4.25	8	44.5904	189.5092	356.7232
	BCT	3.6	5.6	44.5904	160.5254	249.7062
	BCT	1.3	2.5	44.5904	57.96752	111.476
NONCONVENTIONAL						
COD	BAT	21.3	41.2	44.5904	949.7755	1837.124
Ammonia (as N)	BAT	0.45	0.99	44.5904	20.06568	44.14449
Sulfide (as S)	BAT	0.024	0.053	44.5904	1.070169	2.363291

PROCESS WASTEWATER ALLOCATION SECTION
BPT EFFLUENT LIMITATIONS GUIDELINES: PHENOLICS (TOTAL RECOVERABLE), CHROMIUM (T), CHROMIUM (6+)
CALCULATE PROCESS WASTEWATER ALLOCATIONS

Pollutant Mass Allocation = Effluent Limitation Guideline (ELG) * (MULT)

(MULT) = (FEED_STOCK) * (PRO_FAC) * (SIZ_FAC)

(MULT) = 44.5904

PROCESS WASTEWATER ELGs (DAILY AVERAGE): LB. PER 1000 BBL OF FEEDSTOCK

Subpart ==>		Subpart A	Subpart B	Subpart C	Subpart D	Subpart E
Type ==>		Topping	Cracking	Petrochem	Lube	Integrat.
40 CFR ==>	BPT	419.12(a)	419.22(a)	419.32(a)	419.42(a)	419.52(a)
NONCONVENTIONAL						
Phenolics, Total Recoverable	BPT	0.027	0.036	0.045	0.065	0.068
METALS						
Chromium (Total)	BPT	0.071	0.088	0.107	0.16	0.17
Chromium (6+)	BPT	0.0044	0.0056	0.0072	0.011	0.011

PROCESS WASTEWATER ELGs (DAILY MAXIMUM): LB. PER 1000 BBL OF FEEDSTOCK

Subpart ==> / Type ==> / 40 CFR ==>		Subpart A Topping 419.12(a)	Subpart B Cracking 419.22(a)	Subpart C Petrochem 419.32(a)	Subpart D Lube 419.42(a)	Subpart E Integrat. 419.52(a)
NONCONVENTIONAL						
Phenolics, Total Recoverable	BPT	0.06	0.074	0.088	0.133	0.14
METALS						
Chromium (Total)	BPT	0.122	0.15	0.183	0.273	0.29
Chromium (6+)	BPT	0.01	0.012	0.016	0.024	0.025

CALCULATE PROCESS WASTEWATER ALLOCATIONS

		APPLICABLE ELGs DAILY AVERAGE Subpart A Topping	APPLICABLE ELGs DAILY MAXIMUM Subpart A Topping		BPT MASS ALLOCATIONS DAILY AVERAGE	BPT MASS ALLOCATIONS DAILY MAXIMUM
Subpart ==> / Type ==> / 40 CFR ==>	BPT	419.12(a)	419.12(a)	* (MULT) =	(lb/day)	(lb/day)
NONCONVENTIONAL						
Phenolics, Total Recoverable	BPT	0.027	0.06	44.5904	1.203940	2.675424
METALS						
Chromium (Total)	BPT	0.071	0.122	44.5904	3.165918	5.440028
Chromium (6+)	BPT	0.0044	0.01	44.5904	0.196197	0.445904

PROCESS WASTEWATER ALLOCATION SECTION (AMENDED BAT)
CALCULATE TOTAL PROCESS FEEDSTOCK RATES (TOT_C_FEED, TOT_K_FEED, TOT_L_FEED, TOT_A_FEED)

Crude Processes	EPA Process Number	Process Rate (K B/D)
Vacuum Crude Distillation	1	20
Crude Desalting	2	32
Atmospheric Crude Distillation	3	10
TOTAL CRUDE PROCESSES FEEDSTOCK RATE (TOT_C_FEED) ========>		62

PROCESS WASTEWATER ALLOCATION SECTION (AMENDED BAT)
LIST BAT EFFLUENT LIMITATIONS GUIDELINES: PHENOLICS (TOTAL RECOVERABLE), CHROMIUM (T), CHROMIUM (6+)
CALCULATE PROCESS WASTEWATER ALLOCATIONS

Pollutant Mass Allocation = Sum of Crude, Cracking & Coking, Asphalt, Lube, and Reforming & Alkylation Process Mas Allocations

Process Mass Allocation = Effluent Limitation Guideline (ELG) * Total Process Group Feedstock Rate

PROCESS WASTEWATER ELGs
LB. PER 1000 BBL OF FEEDSTOCK

Source of Process Wastewater ELGs	Subpart =>	Subpart A	Subpart B	Subpart C	Subpart D	Subpart E
	Type =>	Topping	Cracking	Petrochem	Lube	Integrat.
	40 CFR => BAT	419.13(c)	419.23(c)	419.33(c)	419.43(c)	419.53(c)

	APPLICABLE ELGs ALL SUBPARTS			BAT MASS ALLOCATIONS	
	DAILY AVERAGE (lb per K bbl/day)	DAILY MAXIMUM (lb per K bbl/day)	* Step 7 Process Group Feed Rate (K B/D)	= DAILY AVERAGE (lb/day)	DAILY MAXIMUM (lb/day)
PHENOLICS (TOTAL RECOV.)					
Crude Processes	0.003	0.013	62	0.186	0.806
Cracking & Coking Processes	0.036	0.147	0	0	0
Asphalt Processes	0.019	0.079	0	0	0
Lube Processes	0.09	0.369	0	0	0
Reforming & Alkylation Processes	0.032	0.132	0	0	0
BAT ALLOCATION: PHENOLICS (TOTAL RECOVERABLE) --->				0.186	0.806
CHROMIUM (TOTAL)					
Crude Processes	0.004	0.011	62	0.248	0.682
Cracking & Coking Processes	0.041	0.119	0	0	0
Asphalt Processes	0.022	0.064	0	0	0
Lube Processes	0.104	0.299	0	0	0
Reforming & Alkylation Processes	0.037	0.107	0	0	0
BAT ALLOCATION: CHROMIUM (TOTAL) -------->				0.248	0.682

CHROMIUM (6+)					
Crude Processes	0.0003	0.0007	62	0.0186	0.0434
Cracking & Coking Processes	0.0034	0.0076	0	0	0
Asphalt Processes	0.0019	0.0041	0	0	0
Lube Processes	0.0087	0.0192	0	0	0
Reforming & Alkylation Processes	0.0031	0.0069	0	0	0
BAT ALLOCATION: CHROMIUM (6+)			========>	0.0186	0.0434

BALLAST WATER ALLOCATION SECTION

Pollutant Mass Allocation = Effluent Limitation Guideline (ELG) * (FLO_BALL)

(FLO_BALL) = 0 K gal/day

STORMWATER ALLOCATION SECTION
LIST BCT EFFLUENT LIMITATIONS GUIDELINES: BOD5, TSS, OIL & GREASE
LIST BAT EFFLUENT LIMITATIONS GUIDELINES: COD (OR TOC), AMMONIA (AS N), SULFIDE (AS S), PHENOLICS (TOTAL RECOVERABLE), CHROMIUM (TOTAL), CHROMIUM (6+)
CALCULATE STORMWATER ALLOCATIONS

Pollutant Mass Allocation = Effluent Limitation Guideline (ELG) * (FLO_SW)

(FLO_SW) = 59.09 K gal/day

Source of Stormwater ELGs	Subpart =>		Subpart A	Subpart B	Subpart C	Subpart D	Subpart E
	Type =>		Topping	Cracking	Petrochem	Lube	Integrat.
	40 CFR =>	BCT	419.14(e)	419.24(e)	419.34(e)	419.44(e)	419.54(e)
	40 CFR =>	BAT	419.13(f)	419.23(f)	419.33(f)	419.43(f)	419.53(f)

STORMWATER ELGs
LB. PER 1000 GAL/DAY

		APPLICABLE ELGs ALL SUBPARTS			STORMWATER MASS ALLOCATIONS	
		DAILY AVERAGE (lb per K gal/day)	DAILY MAXIMUM (lb per K gal/day)	* FLO_SW	DAILY AVERAGE (lb/day)	DAILY MAXIMUM (lb/day)
CONVENTIONAL						
BOD5	BCT	0.22	0.4	59.09	12.9998	23.636
TSS	BCT	0.18	0.28	59.09	10.6362	16.5452
Oil & Grease	BCT	0.067	0.13	59.09	3.95903	7.6817

NONCONVENTIONAL						
COD	BAT	1.5	3	59.09	88.635	177.27
Phenolics, Total Recoverable	BAT	0.0014	0.0029	59.09	0.082726	0.171361
METALS						
Chromium (Total)	BAT	0.0018	0.005	59.09	0.106362	0.29545
Chromium (6+)	BAT	0.00023	0.00052	59.09	0.013590	0.030726

CALCULATE ELG TECHNOLOGY-BASED EFFLUENT LIMITATIONS

ELG Pollutant Mass Limit = Sum of Process, Ballast, and Stormwater Mass Allocations

CALCULATE SUM OF DAILY AVERAGE ALLOCATIONS (PROCESS WASTEWATER, BALLAST WATER, STORMWATER)

	DAILY AVERAGE ALLOCATIONS			SUM
CONVENTIONAL	PROCESS WASTEW. (lb/day)	BALLAST WATER (lb/day)	STORM-WATER (lb/day)	DAILY AVERAGE (lb/day)
BOD5	189.5092	0	12.9998	202.509
TSS	160.5254	0	10.6362	171.1616
Oil & Grease	57.96752	0	3.95903	61.92655
NONCONVENTIONAL				
COD	949.7755	0	88.635	1038.410
Ammonia (as N)	20.06568	---	---	20.06568
Sulfide (as S)	1.070169	---	---	1.070169
Phenolics, Total Recoverable	0.312	---	0.082726	0.394726
METALS				
Chromium (Total)	0.416	---	0.106362	0.522362
Chromium (6+)	0.0312	---	0.013590	0.044790

CALCULATE SUM OF DAILY MAXIMUM ALLOCATIONS (PROCESS WASTEWATER, BALLAST WATER, STORMWATER)

	DAILY MAXIMUM ALLOCATIONS			SUM
CONVENTIONAL	PROCESS WASTEW. (lb/day)	BALLAST WATER (lb/day)	STORM-WATER (lb/day)	DAILY MAXIMUM (lb/day)
BOD5	356.7232	0	23.636	380.3592
TSS	249.7062	0	16.5452	266.2514
Oil & Grease	111.476	0	7.6817	119.1577

NONCONVENTIONAL				
COD	1837.124	0	177.27	2014.394
Ammonia (as N)	44.14449	---	---	44.14449
Sulfide (as S)	2.363291	---	---	2.363291
Phenolics, Total Recoverable	1.352	---	0.171361	1.523361
METALS				
Chromium (Total)	1.144	---	0.29545	1.43945
Chromium (6+)	0.0728	---	0.030726	0.103526

SUMMARIZE ELG TECHNOLOGY-BASED EFFLUENT LIMITATIONS

	ELG TECH-BASED LIMITS	
	DAILY AVERAGE (lb/day)	DAILY MAXIMUM (lb/day)
CONVENTIONAL		
BOD5	202.509	380.3592
TSS	171.1616	266.2514
Oil & Grease	61.92655	119.1577
NONCONVENTIONAL		
COD	1038.410	2014.394
Ammonia (as N)	20.06568	44.14449
Sulfide (as S)	1.070169	2.363291
Phenolics, Total Recoverable	0.268726	0.977361
METALS		
Chromium (Total)	0.354362	0.97745
Chromium (6+)	0.032190	0.074126

COMPARE CURRENT BPJ PERMIT LIMITS WITH NEWLY CALCULATED ELG TECH-BASED LIMITS IS CURRENT BPJ TECH-BASED PERMIT LIMIT < NEW ELG TECH-BASED LIMIT ?
IF ANSWER IS YES, SELECT CURRENT BPJ TECH-BASED PERMIT LIMIT AS NEW PERMIT LIMIT.

IS CURRENT BPJ PERMIT LIMIT < NEW ELG LIMIT ?

	CURRENT BPJ-TECH DAILY AVERAGE (lb/day)	NEW ELG-TECH DAILY AVERAGE (lb/day)	RESPONSE YES = 1 NO = 0	CURRENT BPJ-TECH DAILY MAXIMUM (lb/day)	NEW ELG-TECH DAILY MAXIMUM (lb/day)	RESPONSE YES = 1 NO = 0
CONVENTIONAL						
BOD5	40	202.509	1	75	380.3592	1
TSS	42	171.1616	1	66	266.2514	1
Oil & Grease	12	61.92655	1	22	119.1577	1
NONCONVENTIONAL						
COD	200	1038.410	1	375	2014.394	1
Ammonia (as N)	8	20.06568	1	16	44.14449	1
Sulfide (as S)	0.3	1.070169	1	0.6	2.363291	1
Phenolics, Total Recoverable	0.09	0.268726	1	0.36	0.977361	1
METALS						
Chromium (Total)	0.11	0.354362	1	0.32	0.97745	1
Chromium (6+)	0.009	0.032190	1	0.021	0.074126	1

ESTABLISH MORE STRINGENT OF CURRENT PERMIT BPJ OR ELG TECH-BASED LIMIT AS PERMIT LIMIT

	REVISED PERMIT LIMITS — MORE STRINGENT LIMITS BPJ OR ELG TECH-BASED DAILY AVERAGE (lb/day)	DAILY MAXIMUM (lb/day)
CONVENTIONAL		
BOD5	40	75
TSS	42	66
Oil & Grease	12	22
NONCONVENTIONAL		
COD	200	375
Ammonia (as N)	8	16
Sulfide (as S)	0	1
Phenolics, Total Recoverable	0.09	0.36
METALS		
Chromium (Total)	0.11	0.32
Chromium (6+)	0.01	0.02

MAILING LIST FOR NOTICE

APPLICATION NO. — PERMIT NO. ~~02478102142~~

NOTICE TO BE PUBLISHED BY: _____

APPLICANT:

National Oil Recovery Corporation
Post Office Box 10283
Corpus Christi, Texas 78460

APPLICANT'S REPRESENTATIVE(S):

Shiner Mosley & Assoc Inc.
2820 So. Padre Is Dr. Ste 210
Corpus Christi 78415-1818

FIXED STATE MAILING LIST (by Chief Clerk)

San Patricio COUNTY MAILING LIST (by Chief Clerk)

ADJACENT AND/OR DOWNSTREAM LANDOWNERS PLUS OTHER INTERESTED PERSONS